United States Department of Agriculture

Forest Service

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Cooperative Horse Removal with McDermitt Tribe

Biological Evaluation and Specialist Report

Santa Rosa Ranger District
Humboldt-Toiyabe National Forest
Humboldt County, Nevada

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Cover Photo: Author, July 3, 2014.

Executive Summary:

The project may impact but would not cause a trend toward federal listing for greater sage-grouse, bighorn sheep, pygmy rabbit, and Townsend’s big-eared bat. Take under the migratory bird treaty act and bald and golden eagle protection act is not likely due to the requirement that there would be no helicopters within 1,000 Above Ground Level or within 200 meters horizontally of active raptor nests between March 1 to August 31.

To reduce impacts to greater sage-rouse and pygmy rabbit, operations would not occur between March 1 and June 30.

It is also further recommended though not necessary that speed limits of 20 mph be observed in the project area throughout implementation and that activities do not occur during the peak breeding bird season of May 1 to July 15.

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1. Introduction

The purpose of this Biological Evaluation (BE) and specialist report is to describe and analyze the likely effects from the project to the following terrestrial wildlife species:

- United States Fish and Wildlife Service (USFWS) candidate species (there are currently no threatened, endangered, or proposed terrestrial wildlife species in the project area (USFWS 2014).
- Intermountain (R4) Regional Forester Sensitive Species (RFSS) (United States Department of Agriculture Forest Service (USDAFS) (2013).
- Humboldt National Forest Management Indicator Species (USDAFS 1986)
- Migratory bird species (those listed as birds of conservation concern and Partners in Flight priority species) (USFWS 2008a, Great Basin Bird Observatory (GBBO) 2010, Partners in Flight (PIF) 2014)
- Other species of concern identified by internal and public scoping.

This report is based on the best available science as documented in the literature that was reviewed and cited.

This BE was prepared according to the objectives and standards outlined in Forest Service Manual 2672 (USDAFS 1990). This BE will only address terrestrial wildlife species. Botanical and aquatic species will be addressed separately.

1.1 Laws, Regulations, and Forest Plan Compliance

The following laws, regulations, and Forest Service manual direction relate to this report:

- Forest Service Manual and Handbooks (FSM/H 2600/2670) (USDAFS 1990)
- United States Department of Agriculture (USDA) Policy
- National Forest Management Act (NFMA)
- Endangered Species Act (ESA)
- National Environmental Policy Act (NEPA)
- Migratory Bird Treaty Act
- Bald and Golden Eagle Protection Act
- Executive Order # 13186, Protection of Migratory Birds
- Humboldt National Forest Land and Resource Management Plan (LRMP), as amended (USDAFS 2015).
- Intermountain Region (R4) Sensitive Species List (USDAFS 2013).

Candidate species are not afforded protection under the Endangered Species Act of 1973, as amended, but could be proposed for listing in the future. RFSS include "those plant and animal species identified by a Regional Forester for which population viability is of concern." The “sensitive” determination of individual species is based on “significant current or predicted downward trends” in: 1) population numbers or density; or 2) habitat capability that would reduce a species' existing distribution (USDAFS

1990). In 1990, Region 4 compiled a species list by forest, and this list was revised in 2003, and updated in 2008, 2010, in February 2013. The species list was used to determine what species might be present in the project area or its area of influence (USDAFS 2013).

The Forest Service is responsible for protecting all federally proposed and listed species and the Regional Forester Sensitive Species (RFSS). In addition, the Forest Service is directed to "assist states in achieving their goals for conservation of endemic species" (FSM 2670.32). State-listed species are not addressed in this report unless they are also federally-listed, RFSS, MIS, or have been identified as a project-specific issue.

The Secretary of Agriculture's Policy on Fish and Wildlife (9500-4) directs the Forest Service to "manage habitats for all native and desired nonnative plants, fish and wildlife species to maintain viable populations of each species; identify and recover threatened and endangered plant and animal species" and to avoid actions "which may cause species to become threatened or endangered."

The Humboldt Forest Plan states the following in regards to wildlife:

Goal #14: Improve the current productive level of wildlife habitat with emphasis on maintaining or improving limiting factors such as big game winter ranges, in cooperation with the Nevada Department of Wildlife.

Goal #15: “Manage classified species, such as bald eagle (E), peregrine falcon (E), Lahontan cutthroat trout (T), Bonneville cutthroat trout (S) habitat, to maintain or enhance their status through coordination with other land use programs, agency cooperation, and direct habitat improvements. (Note: E = endangered, T = threatened, S = Sensitive).”

The Humboldt Forest Plan provides specific standards and guidelines to manage wildlife habitat (USDAFS 1986, p. IV-29-48).

The Forest plan specifically states that we should:

- Provide habitat for sensitive and federally listed species.
- Protect and improve key or important habitats.
- Protect complexes comprised of moist habitats and adjacent security areas.
- Protect key sage grouse breeding complexes; i.e. strutting grounds and associated nesting areas.
- Improve or maintain the quantity and quality of terrestrial and riparian habitats.
- Protect or improve riparian dependent resources.

In addition under the sage-grouse plan amendment activities that could cause disturbance during sensitive lekking and brood rearing times should be avoided between March 1 and June 30.

2. Project Location

The proposed cooperative horse removal would occur on the northern part of the Santa Rosa Ranger District, Humboldt-Toiyabe National Forest (HTNF) in the South and East Forks of Quinn River and Eightmile Creek watersheds, which is located in Humboldt County 75 miles north of Winnemucca, Nevada off Highway 95. Winnemucca is about a two-and-a-half-hour drive northeast of Reno. The removal area is in open, high-elevation rangelands. Public lands administered by BLM Winnemucca and Vale Districts, and the Fort McDermitt Tribal lands border the ranger district.

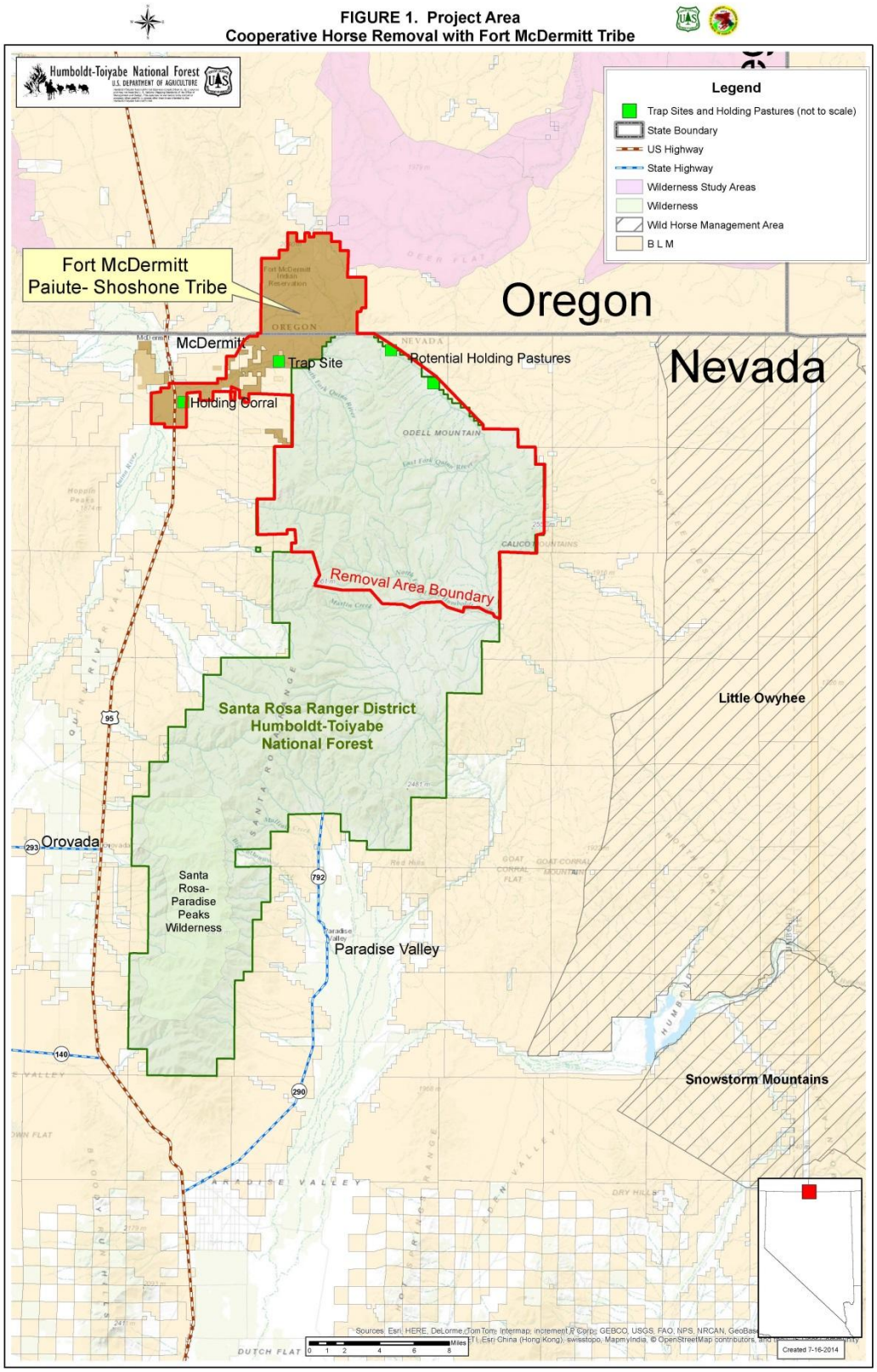
The Project Area is located approximately 30 miles north of Winnemucca, Nevada as shown in Figure 1.

The project area includes portions of six Inventoried Roadless Areas (IRAs), including Devils Gate, South Fork Quinn, East Fork Quinn, Steward Basin, IRA 1-05, and Staunton Ridge. IRA acreage within the project area is approximately 101,200 acres.

The legal description is the following:

T38S R42E Sections 10-15, 22-27, 34-36, T38S R43E Sections 7-36, T38S R44E Sections 7-36, T38S R45E Sections 7-36, T38S R46E Sections 7, 13-36, T38S R47E Sections 13-36, T38S R48E Sections 13-36, T38S R49E Sections 18-19, 30-31, T39S R42E Sections 1-3, 10-14, 23-35, 35-36, T39S R43E Sections 1-36, T39S R44E Sections 1-36, T39S R45E Sections 1-36, T39S R46E Sections 1-36, T39S R47E Sections 1-36, T39S R48E Sections 1-36, T39S R49E Sections 6-7, 18-19, 30-31, T40S R42E Sections 1-2, 12-13, 24-25, T40S R43E Sections 1-36, T40S R44E Sections 1-36, T40S R45E Sections 1-36, T40S R46E Sections 1-36, T40S R47E Sections 1-36, T40S R48E Sections 1-36, T40S R49E Sections 6-7, 18-19, 30-31, T41S R43E Sections 1-24, T41S R44E Sections 1-24, T41S R45E Sections 1-24, T41S R46E Sections 1-24, T41S R47E Sections 1-24, T41S R48E Sections 1-24, T41S R49E Sections 6-7, 18-19, T48N R38E Sections 36, T48N R38E Sections 31-36, T47N R36E Sections 1, 11-14, 23-26, 36, T47N R37E Sections 1, 7-36, T47N R38E Sections 1-36, T47N R39E Sections 1-36, T47N R40E Sections 1-36, T47N R41E Sections 1-36, T47N R42E Sections 1-36, T47N R43E Sections 6-7, 18-19, 30-31, T46N R36E Sections 1, 12-13, 36, T46N R37E Sections 1, 7-36, T46N R38E Sections 1-36, T46N R39E Sections 1-36, T46N R40E Sections 1-36, T46N R41E Sections 1-35, T46N R42E Sections 1-19, T46N R43E Sections 6-7, 18, T45N R39E Sections 1-2, 11-13, T45N R40E Sections 1-18, T45N R41E Sections 3-10, 16-21, T45N R42E Sections 1-19, T45N R43E Sections 6-7, 18, Mount Diablo Meridian.

Figure 1. Project Area



3. Purpose and Need and Proposed Action

In cooperation with the Fort McDermitt Tribe, the Forest Service will use a contracting service to implement a helicopter drive-trapping gather to remove the unauthorized tribal horses from the Santa Rosa Ranger District and adjoining Fort McDermitt tribal lands. Several removals, each lasting from 4 to 14 days will be conducted within one year of the first removal, depending on availability of funds.

The unauthorized horses will be gathered from NFS land and tribal rangelands to designated trap sites located on tribal lands. Gathering will be done by helicopter and some animals may be herded, where necessary, by riders on horseback. Two trap site may also be located on NFS lands. The tentative location of these two trap sites are shown on Figure 1. Exact locations for the sites on NFS land will be determined by the Forest Service Contracting Officer Representative, and contractor. Trap site locations will not be set up near greater sage-grouse leks, known populations of sensitive species, or in riparian areas, cultural resource sites, wilderness, or wilderness study areas.

From the trap sites, the unauthorized horses will be moved by truck and trailer or herded to the Fort McDermitt Reservation Rodeo Grounds. The rodeo grounds will be configured as the holding facility. Tribal members will be responsible for the care, feeding and watering of the unauthorized horses while at the holding facility.
At the tribal holding facility, the unauthorized horses will be inspected by a team of tribal and Nevada state brand inspectors to determine ownership. Forest Service personnel will also be on hand to record the ownership of horses to help with future management.

The Fort McDermitt Tribe is responsible for disposition of the horses back to their owners, arrangement of sale, or transport of the domestic horses off tribal lands. After ownership is determined, each horse owner has the option to claim and remove their horse(s) or give written authorization for the Tribal Council to sell their horse(s) on the owner's behalf. The Forest Service and Tribe will ensure that all horses are treated humanely while under their control and responsibility.

Design Features:

Support vehicles will be confined to state and county roads, Forest Service and BLM system roads, and established roads on tribal lands.

Helicopter flight patterns will avoid air space over the Santa Rosa-Paradise Peak Wilderness, which is approximately 20 miles south of the gather area.

The Forest Service will provide wild horse specialists to ensure no wild horses or burros are inadvertently gathered during the removal of the unauthorized horses. If a wild horse or burro is caught, it will be taken back to the BLM's Little Owyhee Herd Management Area and released. The Little Owyhee Herd Management Area is approximately 10 miles from the project area.

Specific measures to protect wildlife are:

- No activity between March 1 and June 30 to protect Greater Sage-grouse lekking and for pygmy rabbit breeding season.
- From March 1 to August 31 helicopters must stay 1,000 Above Ground Level from active raptor nests and a 200-meter horizontal buffer for on-the-ground activity.
- Avoid activity during the breeding bird season from May 1 to July 15.

Identification of Needs for Change – Purpose and Need for this Proposal

- Law enforcement efforts have not been an effective tool to remove unauthorized domestic horses and have strained relationships between the FS and the Tribe. Cooperative Tribal horse gathers of unauthorized domestic livestock can lead to reasonable and sustainable management of livestock on both Tribal and public lands.
- The unauthorized Tribal horse population has increased to around 1,200 head. As the population increases the distribution has been expanding. The lack of fencing around the Tribal lands has allowed Tribal horses to free roam, in search of forage and water, away from tribal lands while increasing their population numbers.
- Unauthorized domestic horses are utilizing forage in areas that are intended for livestock production forcing Forest Service grazing permittees to reduce numbers to prevent overuse of forage and water resources.
- Expanded distribution of unauthorized Tribal horses could potentially result in development of feral herds or bands adjoining the Little Owyhee HMA and further degrade habitats in those areas.

4. Species Considered

Species considered were evaluated using the following resources:

- R4 RFSS list (USDAFS 2016)
- NatureServe (NatureServe 2014).
- Nevada Natural Heritage Program (NNHP 2014).
- USFWS Species (USFWS 2015)
- Migratory Birds of Conservation Concern (USFWS 2008a, GBBO 2010, PIF 2014)
- Corporate GIS data (includes NDOW and Natural Heritage Program Data)

See Table 1 for a list of species considered, their status, and determination of effects. Only those species with a probable to confirmed likelihood of occurrence in Table 1 will be discussed in detail in Section 5 of this document.

Table 1. Species Considered

Common Name	Scientific Name	Status*	Likelihood of occurrence**	Habitat Y/N	Determination of Effects*** Proposed Action
Regional Forester Sensitive Species- Terrestrial Wildlife (USDAFS 2016)					
Greater sage-grouse	*Centrocercus urophasianus*	RFSS,MIS, G4, S3S4	C	Y	MINT
Bald Eagle	*Haliaeetus leucocephalus*	RFSS,G5, S1B, S3N	P	Y	NI
Bighorn Sheep	*Ovis canadensis*	RFSS, G4T4	C	Y	MINT
Flammulated owl	*Otus flammeolus*	RFSS,G4, S4B	N	N	NI
Great gray owl	*Stix nebulosa*	RFSS,G5	N	N	NI
Mountain quail	*Oreortyx pictus*	RFSS, G5, S3	M	Y	NI
Northern goshawk	*Accipiter gentilis*	RFSS,MIS, G5, S2	N	N	NI
Peregrine falcon	*Falco peregrinus anatum*	RFSS,G4T 4, S2	N	N	NI
Pygmy rabbit	*Brachylagus idahoensis*	RFSS,G4, S3	C	Y	MINT
Spotted bat	*Euderma maculatum*	RFSS, G4, S2	M	Y	NI
Three-toed woodpecker	*Picoides tridactylus dorsalis*	RFSS,G5, S2	N	N	NI
Townsend's big-eared bat	*Corynorhinus townsendii pallescens*	RFSS,G4T 4, S4	P	Y	MINT
Regional Migratory Birds of Concern (USFWS 2008a, PIF 2014, GBBO 2010)					
Golden eagle	*Aquiila chrysaetos*	G5, S4	C	Y	ST
Black rosy-finch	*Leucosticte atrata*	G4, S3	N	N	ST
Brewer's sparrow	*Spizella breweri*	G4,S4B	C	Y	ST
Burrowing owl	*Athene cunicularia hypugaea*	G4T4,S3B	P	Y	ST
Ferruginous hawk	*Buteo regalis*	G4, S2	P	Y	ST
Gray flycatcher	*Empidonax wrightii*	G5,S4B	P	Y	ST
Lewis's woodpecker	*Melanerpes lewis*	G4, S3	M	Y	ST
Loggerhead shrike	*Lanius ludovicianus*	G4, S4	P	Y	ST
Pinyon jay	*Gymnorhinus cyanocephalus*	G4, S3S4	N	N	ST
Prairie falcon	*Falco mexicanus*	G5, S4	P	Y	ST
Sage sparrow	*Amphispiza belli*	G5, S4B/N	P	Y	ST

Common Name	Scientific Name	Status*	Likelihood of occurrence**	Habitat Y/N	Determination of Effects*** Proposed Action
Short-eared owl	*Asio flammeus*	G5, S4	P	Y	ST
Swainson's hawk	*Buteo swainsoni*	G5, S2B	P	Y	ST
Virginia's warbler	*Vermivora virginiae*	G5, S4B	N	N	ST
Eared grebe	*Podiceps nigricollis*	G5, S4B	N	N	ST
Yellow rail	*Coturnicops noveboracensis*	G4 (no records in Nevada)	N	N	ST
Snowy plover	*Charadrius nivosus nivosus (alexandrinus)*	G3T3, S3B	N	N	ST
Long-billed curlew	*Numenius americanus*	G5, S2S3B	M	Y	ST
Marbled godwit	*Limosa fedoa*	G5, S3M	M	Y	ST
Black swift	*Cypseloides niger*	G4 (no records in Nevada)	N	N	ST
Calliope hummingbird	*Selasphorus (Stellula) calliope*	G5, S4B	P	Y	ST
Williamson's sapsucker	*Sphyrapicus thyroideus*	G5, S2	N	N	ST
White-headed woodpecker	*Picoides albolarvatus*	G4, S2	N	N	ST
Willow flycatcher	*Empidonax trailii brewsteri*	G5, S3B	P	Y	ST
A Willow Flycatcher	*E.t. adastus*	G5T5, S1S2	P	Y	ST
Sage thrasher	*Oreoscoptes montanus*	G5, S5B	P	Y	ST
Green-tailed towhee	*Pipilo chlorurus*	G5, S5B	P	Y	ST
Black-chinned sparrow	*Spizella atrogularis*	G5, S3B	N	N	ST
Tricolored blackbird	*Agelaius tricolor*	G3G4, S1B	N	N	ST
American white pelican	*Pelecanus erythrorhynchos*	G4, S2B	N	N	ST
Franklin's gull	*Leucophaeus pipixcan*	G4G5, S3B	N	N	ST
American avocet	*Recurvirostra americana*	G5, S4B	M	Y	ST
Red-breasted sapsucker	*Sphyrapicus ruber*	G5, S3	N	N	ST
Trumpeter swan	*Cygnus buccinator*	G4, S1B	N	N	ST
Tundra swan	*Cygnus colombianus*	G5, S4N	N	N	ST
Northern pintail	*Anus acuta*	G5, S5	M	Y	ST
Canvasback	*Aythya valisineria*	G5, S3S4	M	Y	ST
Redhead	*Aythya americana*	G5, S4B	M	Y	ST
Lesser scaup	*Aythya affinis*	G5, S1	M	Y	ST

Common Name	Scientific Name	Status*	Likelihood of occurrence**	Habitat Y/N	Determination of Effects*** Proposed Action
Dusky grouse	*Dendragapus obscurus*	G5, S3	M	Y	ST
Sooty grouse	*Dendrapagus fuliginosus*	G5, SNR	N	Y	ST
Columbian sharp-tailed grouse	*Tympanachus phasianellus*	G5, S1	N	N	ST
Gambel's quail	*Callipepla gambelii*	G5, S5	N	N	ST
Common loon	*Gavia immer*	G5, S2N	N	N	ST
Western grebe	*Aechmophorus occidentalis*	G5, S4B	N	N	ST
Clark's grebe	*Aechmophorus clarkii*	G5, S4B	N	N	ST
Least bittern	*Ixobrychus exilis*	G5, S2B	M	Y	ST
Snowy egret	*Egretta thula*	G5, S4B	M	Y	ST
White-faced ibis	*Plegadis chihi*	G5, S3B	M	Y	ST
Clapper rail	*Rallus longirostris*	G5, S1	N	N	ST
Sandhill crane	*Grus canadensis tabida*	G5T4, S2B, S3M	P	Y	ST
Black-necked stilt	*Himantopus mexicanus*	G5, S3S4B	M	Y	ST
Willet	*Tringa semipalmata*	G5, S3B	P	Y	ST
Western sandpiper	*Calidris mauri*	G5, S5M	P	Y	ST
Least sandpiper	*Calidris minutilla*	G5, S4N	P	Y	ST
Long-billed dowitcher	*Limnodromus scolopaceus*	G5, S4N	M	Y	ST
Wilson's phalarope	*Phaloropus tricolor*	G5, S2S3B, S4M	P	Y	ST
Red-necked phalarope	*Phaloropus lobatus*	G4G5, S4M	M	Y	ST
Black tern	*Childonius niger*	G4, S2S3B	N	N	ST
Band-tailed pigeon	*Columba fasciata*	G4, S3	M	Y	ST
Common poorwill	*Phalaenoptilus nuttallii*	G5, S5B	P	Y	ST
White-throated swift	*Aeronautes saxatalis*	G5, S4B	M	Y	ST
Costa's hummingbird	*Calypte costae*	G5, S3B	N	N	ST
Rufous hummingbird	*Selasphorus rufus*	G5, S3M	P	Y	ST
Gilded flicker	*Colaptes chrysoides*	G5, S1	N	N	ST
Olive-side flycatcher	*Contopus cooperi*	G4, S2B	P	Y	ST
Arizona Bell's vireo	*Vireo bellii arizonae*	G5T4, S2BN	N	N	ST

Common Name	Scientific Name	Status*	Likelihood of occurrence**	Habitat Y/N	Determination of Effects*** Proposed Action
Gray vireo	*Vireo vicinior*	G4, S3B	N	N	ST
Bendire's Thrasher	*Toxostoma bedirei*	G4G5, S1	N	N	ST
Le Conte's Thrasher	*Toxostoma lecontei*	G4, S2	N	N	ST
Lucy's warbler	*Oreothlypis virginiae*	G5, S2S3B	N	N	ST
Hermit warbler	*Setophaga occidentalis*	G4G5, S2B	N	N	ST
Grace's warbler	*Setophaga graciae*	G5, S2B	N	N	ST
Abert's towhee	*Melozone aberti*	G3G4, S3	N	N	ST
Management Indicator Species (Greater Sage-grouse and Northern Goshawk included in RFSS section above).					
Mule deer	*Odocoileus hemionus*	MIS, G5, S5	C	Y	ST

***Status:**

Forest Service Status: RFSS- Regional Forester Sensitive Species; MIS-Management Indicator Species

Federal Status: FT – Threatened; FE – Endangered ; FP- Proposed; FC- Candidate, FEXPN- Experimental-Nonessential

NatureServe Element Rank:
G- Global; T- Infraspecific Taxon; S- State
1 – Critically imperiled
2 – Imperiled
3 – Vulnerable to extirpation or extinction
4 – Apparently secure
5 – Demonstrably widespread, abundant
Q- Questionable taxonomy;?- Inexact rank; B- Breeding ; N-Non-breeding; NA- Not Applicable- not appropriate for conservation.

***Likelihood of Occurrence:**

Confirmed: Species has been observed within the project area; a documented occurrence is on file for uncommon or rare species.

Probable: Habitat is suitable, species has been documented on the Forest but not necessarily within the project/proposed project area. Likelihood of occurrence is high. (Consideration is given to transient species)

Minimal: Some habitat exists; species may or may not have been documented on Forest. Likelihood of occurrence within the project area or proposed project is low.

None: Species may occur within region, but has no recent record of occurrence on the districts and/or habitat within the project area does not exist, or is not suitable.

****Determinations**

Federally-listed Species:
NE- "No Effect"
BE- "Beneficial Effect"
NLAA- "May Effect, Not Likely to Adversely Affect"
MLAA "May Effect, Likely to Adversely Affect"
Regional Forester Sensitive Species
NI- "No Impact"
BI- "Beneficial Impact"
MINT- "May impact individuals but is not likely to cause a trend to federal listing or loss of viability"
MILT- "May impact individuals and likely to result in a trend to federal listing or loss of viability"

Migratory Birds and Mule Deer: DT- Actions contribute to declining trend; UT- Actions contribute to upward trend; ST- Actions contribute to stable trend

5. Affected Environment and Analysis of Effects

A portion of the project area was surveyed by the northeast zone wildlife biologist on July 3, 2014. No candidate or regional forester sensitive wildlife species were observed, though several domestic horses were observed.

5.1 USFWS Threatened, Endangered, and Candidate Species

A species list was received on November 2, 2018 (USFWS 20145 Consultation Code: 08ENVD00-2019-E-00142). There are no listed or candidate terrestrial wildlife species.

The USFWS also requested effects to migratory birds and golden eagle be analyzed, which is done in section 5.4 of this document.

5.1.1 Greater sage-grouse

The 1986 Forest Plan identified the 1986 population of sage-grouse on the Humboldt National Forest at 36,300, with a maximum potential of 40,000 animals. Minimum viable population for the Humboldt National Forest was identified as 3,900 animals under the MIS discussion (USDAFS 1986).

According to Nevada Department of Wildlife monitoring efforts, in 2001, sage-grouse populations within the state of Nevada were estimated at approximately 65,000 adult birds. Sage grouse populations in the state peaked during the late 1970s; however, they have been on a steady decline since and are currently down an estimated 49-60 percent from their peak (Neel 2001). Annual rates of change analyzed by Connelly et al. (2004) suggest a long-term decline for sage-grouse in Nevada. This trend is affirmed by a review by the Western Association of Fish and Wildlife Agencies (WAFWA) (2008).

Sage-grouse rely heavily on sagebrush communities to meet life requirements, depending upon sagebrush year ‘round for cover. Throughout its range, sage-grouse generally select low rolling hills and adjacent valleys especially where patches of big sagebrush are intermixed with areas of low sagebrush (Autenrieth 1981). Preferred areas are generally where slopes are less than 30 percent, although they are also found on steeper slopes. Standing water is an essential component of sage grouse habitat. The need for water depends on the availability of preferred, succulent vegetation and when the preferred forbs dry out (Autenrieth 1981, Klebenow 1985).

The Forest Service issued interim recommendations for sage grouse management on October 2, 2012. Those recommendations were closely reviewed and it was determined that this project meets interim guidelines, particularly by including seasonal restrictions during the breeding season (USDAFS 2012).

Habitat components that fulfill yearly life requirements for sage grouse include:

1. Lek: strutting grounds found in open areas surrounded by sagebrush where males display between March 1 to May 15 to attract females for breeding. Leks and approximately a two-mile radius around the lek are the focal point of the breeding and nesting complex. Areas larger than the two-mile radius may be necessary where sagebrush communities are heavily fragmented.

2. Nesting and early brood rearing habitat: Used March 15 through June 30. Suitable habitat requires nesting cover and food availability and sagebrush stands with a robust understory of grasses and forbs. Bluebunch wheatgrass is preferred because of its growth form. An ample variety, distribution and abundance of forbs, and insects such as ants and beetles, is needed as food for chicks.

3. Late brood-rearing habitat: late July 1 through September 30. Preferred habitat includes healthy riparian areas, wet meadows, and upland plant communities with available food, primarily forbs such as Yarrow (*Achillea*), Buckwheat (*Eriogonum*), Dandelion (*Taraxicum*), Prickly lettuce (*Lactuca*), False Dandelion (*Agoseris*), Paintbrush (*Castilleja*), Salsify (*Tragopogon*), and Hawksbeard (*Crepis*). Forb abundance, diversity and availability are crucial. Close proximity to escape cover (sagebrush) is also important.

4. Winter habitat: November 15 to March 15. South-facing and/or wind-swept gentle slopes. Sagebrush (for cover and food) must be available during periods of deep snow.

Breeding sites, or “leks” are usually situated on ridge tops or grassy areas surrounded by a substantial brush and herbaceous component (Schroeder et al 1999). These breeding areas tend to be located at a point intermediate between the winter and summer range. Males perform a strutting display (Schroeder, et al 1999) on established open areas usually 0.2 to 12 acres in size, but they may be as large as 100 acres or more (Autenrieth 1981, Neel 2001). Sage grouse prefer leks adjacent to dense brushy cover, which is important during strutting when the birds are exposed to predators.

Sage grouse build nests in the vicinity of a lek within 7-10 days after breeding. Most sage grouse nests occur under sagebrush. Mean height of the sagebrush used is commonly 29-80 cm and nests tend to be under the tallest sagebrush within a stand (Connelly et. al. 2000). Grass height and cover also are important components of sage grouse nest sites. Herbaceous cover associated with nest sites, provides scent, visual and physical barriers to potential predators (DeLong et al 1995). Most nests are within 4 miles of a lek, (Connelly et. al. 2000) but some females may nest more than 12 miles away (Autenrieth 1981). Nesting habitat for sage grouse is characterized primarily by Wyoming big sagebrush communities that have 15 to 38 percent canopy cover and a grass and forb understory. Dense sagebrush cover is important to nesting success of sage grouse (Connelly et al 2000). Sage grouse breed between mid-February and mid May with nesting and brood-rearing occurring during May through July (Neel 2001). Early brood-rearing areas occur in upland sagebrush habitats close to nest sites. These may be relatively open stands of sagebrush with greater than 15 percent canopy cover

of grasses and forbs (Connelly et. al. 2000). Plant species richness with abundant forbs and insects characterize brood areas. Grouse usually move to more wetter sites during June and July (Autenrieth 1981, Klebenow 1985). Broods occupy a variety of habitats during summer, including sagebrush, wet meadows, farmland and other irrigated areas adjacent to sagebrush habitats (Connelly et. al. 2000). Summer and dispersal habitat consists of sagebrush mixed with areas of wet meadows, riparian, or irrigated fields. As grouse habitat becomes drier, broods move to more wet meadows where grasses and insects are still available (Neel 2001).

Sage grouse also rely upon sagebrush for food, but the degree of this dependence varies seasonally. During early brood-rearing the chicks' diet consists of succulent forbs, grasses, and insects, while the adults still rely on some sagebrush at this time. Insects, especially ants and beetles are an important component. Forbs increase in the diet after the first week and remain the major food item for juveniles throughout the summer, with the adult grouse relying slightly more upon the sagebrush in their diet. As meadows dry and frost leads to the drying and killing of forbs, grouse shift their primary diet to sagebrush leaves. Sage grouse form flocks as brood groups break up in early fall. Fall movements to winter range occur from late August to December, depending on snowfall. From late summer to the following spring, sagebrush continues to be the main diet of sage grouse. Several species of sagebrush are used, including Wyoming big sagebrush, mountain big sagebrush, low sagebrush, black sagebrush, fringed sagebrush and silver sagebrush (Neel 2001).

In Nevada, sage grouse populations have been monitored through lek counts and analysis of hunter wing returns. This analysis is completed by NDOW annually. A small percentage of leks are surveyed each year to determine sage grouse trends in Nevada; counts are not completed at each lek (Huebner 2009).

There are 23 leks in the project area and 18 more within four miles of the project area.

The project area is approximately 755,529 acres, of which 113,212 acres are on the Santa Rosa Ranger District. In the entire project area there are 605,931 acres (80% of the project area) of Preliminary Priority Habitat (PPH) and 42,670 acres (6% of the project area) of Preliminary General Habitat (PGH). On the portion of the project area on the district there are 93,589 acres of PPH and 13,745 acres of PGH. The Santa Rosa Ranger District contains a total of 191,097 acres of PPH and 35,478 acres of PGH. The project area includes 49% of the PPH on the district and 39% of the PGH. See Figure 2 for more information. (Corporate GIS Data).

Figure 2. Sage Grouse Habitat

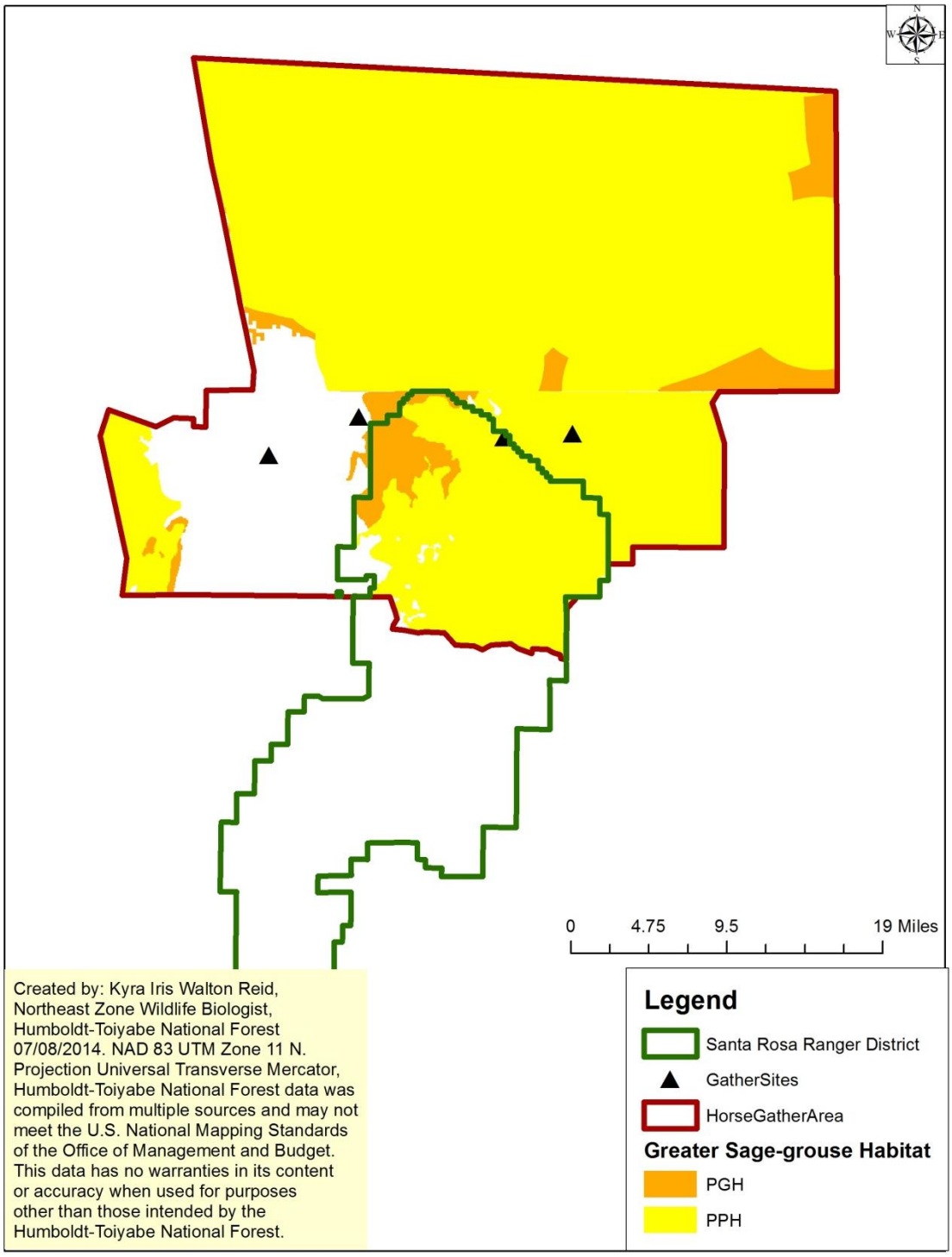
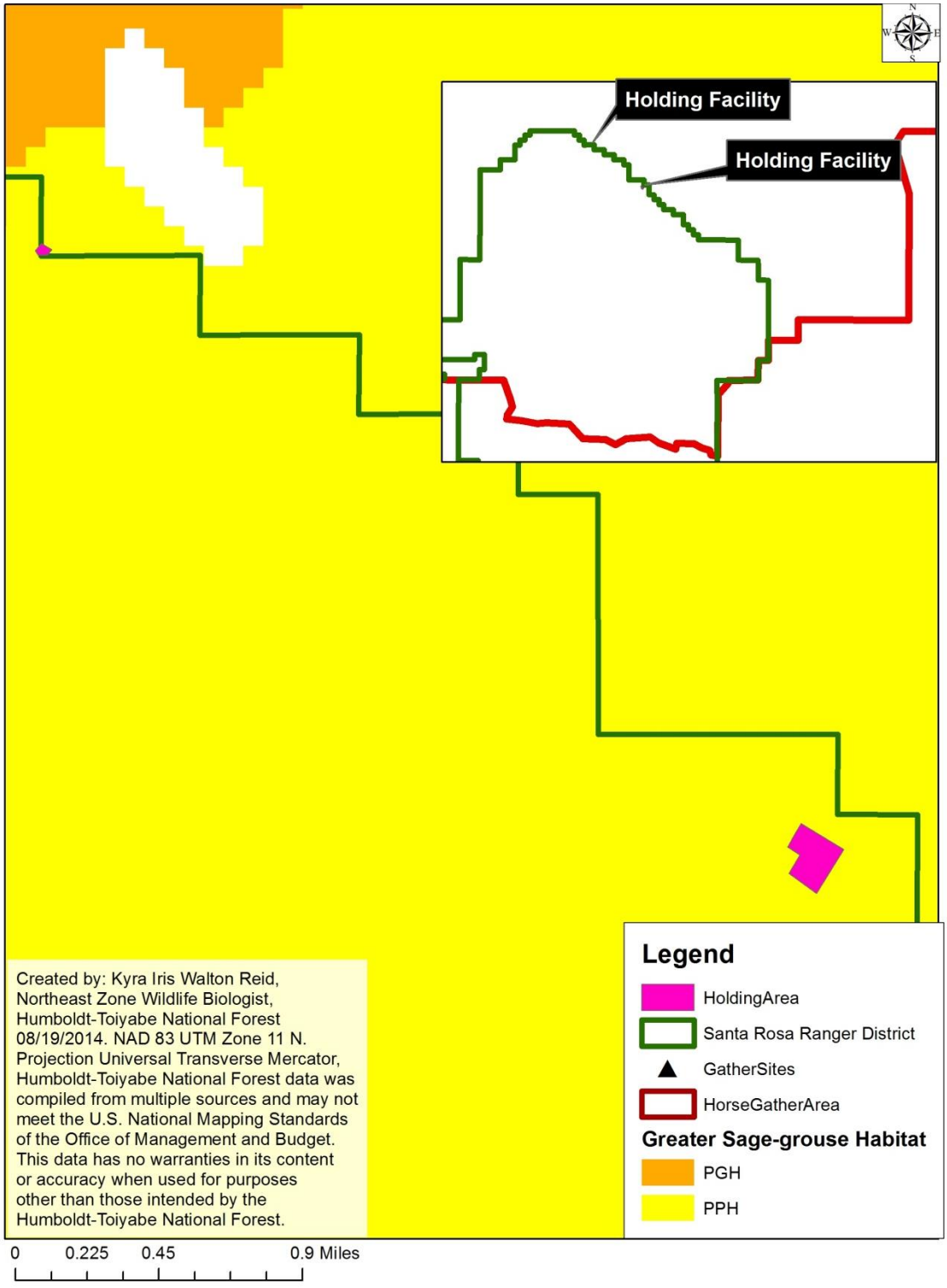


Figure 3. Holding Facilities



5.1.2.1 Determination of Effects

According to Connelly et al (2000), sage grouse are sensitive to human disturbance near leks. Connelly et al. did not examine disturbance from roads specifically, but identified an area of 0.5 km (0.31 miles) from a lek as being the most sensitive, and an area of 3.2 km of a lek recommended as being protected from development. For migratory populations of sage grouse it was recommended to protect habitats within 5 km of a lek (2000). Currently it is not known how migratory sage grouse populations are on the Santa Rosa Ranger District.

To reduce direct impacts during the critical lekking and nesting periods, no activities would occur March 1 to June 30 according the plan amendment (USDAFS 2015). If possible it is recommended that activities be delayed until after July 15 to further protect late-nesting sage-grouse and other migratory birds. Direct impacts could include vehicle-related mortality and noise disturbance (from helicopters and vehicles) that could potentially lead to avoidance of the area during brood-rearing. The likelihood of vehicle-related mortality would be reduced if a speed limit of 20 miles per hour was observed during project implementation. The project may occur over several years and each gathering period could last up to 7 days, with numerous gathering periods occurring throughout the late spring, summer, and fall. There could be up to 28 cumulative days of gathering operations. Trap sites and holding facilities are not near any leks

Indirect effects are effects to the species habitats. Currently the unregulated grazing of the domestic horses is removing important forage for sage-grouse and degrading the quality of wet meadows that are critical during brood-rearing. Habitat would improve over the long-term with the removal of 1,200 head of domestic horses. No habitat would be lost as holding facilities would be temporary. The proposed overnight holding facilities on the forest are in heavily disturbed habitats that are within PPH. The short duration of their use will not meaningfully impact the areas or further degrade the quality of habitat for sage-grouse.

Cumulative effects are analyzed at the scale of the project area and include fire and invasive species, grazing, off-road travel and mining. A majority of the project area has burned in the last ten years and there are issues with annual grasses such as cheatgrass that have altered the fire regime. Grazing is authorized on Forest Service and BLM lands in the project area. Livestock grazing can affect the quality of nesting and brood-rearing habitat by reducing cover and nutrient content of grasses and forbs (Thines et al. 2004). Mining exploration is not currently occurring in the portions of the project area on the Santa Rosa Ranger District but has occurred in the past. Travel management has occurred on the district and cross-country travel is no longer permitted which has benefitted sage-grouse. There are several miles of transmission lines and cell towers in the cumulative effects analysis area that have fragmented habitat and created perches for corvids and raptors that can predate on nests and chicks, as well as adults.There are currently no reasonably foreseeable actions for the project area portion on the district.

Based on the potential direct, indirect, and cumulative effects, and the design feature of no activity between March 1 and June 30, and the long-term improvement for sage-grouse habitat, the proposed action **may impact but would not contribute to a trend toward federal listing (MINT).**

5.2 Regional Forester Sensitive Species

Species from Table 1 with a “probable” or “confirmed” occurrence will be analyzed. Bald Eagles will be analyzed along with Golden Eagles in Section 5.4.

5.2.1 Bighorn Sheep

California bighorn sheep belong to the species *Ovis canadensis*, which includes rocky mountain bighorn sheep and desert bighorn sheep. California bighorn sheep are a medium sized ungulate and like all bighorn sheep have large curved horns.

The Santa Rosa Mountains are historic range for bighorn sheep. The last recorded sighting was made in the 1930’s. It is estimated that the bighorn disappeared because of a combination of factors including poaching, disease and competition for food, water and space with domestic livestock, particularly domestic sheep. During the last decades of the nineteenth century, and until about 1910, large bands of nomadic domestic sheep and cattle grazed this area. After the National Forest was established, livestock numbers were reduced and eventually domestic sheep were removed from the range. The Eightmile Canyon cattle and horse allotment covered a land area of over 15,000 acres. Livestock distribution was difficult to maintain and this resulted in an over-used condition in the riparian areas. The Eightmile Canyon area was later identified as potential habitat for California bighorn sheep and has been in non-use from 1974 to the present.

Nevada Department of Wildlife released twelve California bighorn sheep into Eightmile Canyon on March 23, 1978. Later that year five lambs were born. Two mortalities occurred, but fifteen bighorns made it through the winter in good condition. Subsequent releases followed in 1987, 1989, and 1998. These releases were just south of the Eightmile area in Sawtooth, Andorno and Indian Creek drainages, respectively. The bighorns from these releases formed three distinct herds. The Sawtooth herd is the most southern herd, the Eightmile herd is the most northern herd and the Indian Creek and Andorno Creek releases make up the third herd that occurs between Eightmile and Sawtooth. The Willow Creek drainage is a natural separation between the two southern herds. Throughout the years since the initial releases, NDOW has taken California Bighorn Sheep from these herds to supplement herds in other parts of Nevada as well as in other states. In 2003 the herds on the southern portions of the range suffered a large die-off resulting from contact with unauthorized domestic sheep. The die off affected the herd significantly and resulted in a large decrease in the reproduction of these herds. As expected there was no lamb recruitment into the population on the south end of the range where the die off occurred. Both ground surveys and aerial surveys conducted in the areas found only adults.

California bighorn sheep rarely venture off the District and reside totally on the Santa Rosa Ranger District. In 2012 the population estimate for the district was 200 (Partee 2012).

The California bighorn sheep on the Santa Rosa Ranger District continue to expand in new use areas as evident by reported sightings. Nomadic rams explore into new areas in search of forage and eventually establish their own band there. In recent years there have been die-offs due to disease and more subsequent introductions on the district.

5.2.1.1 Determination of Effects

Direct impacts could include vehicle collisions and disturbance during the cumulative 28 days of project activities from the helicopters that could lead to avoidance of the project area implementation. Lambing season is a particularly sensitive time period and usually occurs in early spring. NDOW was consulted and they had no concerns with the project impacting bighorn sheep lambing areas or disturbing the rutting period in the fall (Partee 2014).

Indirect effects are effects to the species habitats. Habitat would improve over the long-term with the removal of 1,200 head of domestic horses. Forage would increase and there would be reduced competition for both forage and water. No habitat would be lost as part of this project. Holding facilities on the forest are in already disturbed habitat that is not known to be used by bighorn sheep.

Cumulative effects are analyzed at the scale of the project area and include fire and invasive species, grazing, off-road travel and mining. A majority of the project area has burned in the last ten years and there are issues with annual grasses such as cheatgrass that have altered the fire regime. Grazing is authorized on Forest Service and BLM lands in the project area. Livestock grazing can affect the quality of habitat by completion for forage and reducing the nutrient content of grasses and forbs (Thines et al. 2004). Mining exploration is not currently occurring in the portions of the project area on the Santa Rosa Ranger District but has occurred in the past. Travel management has occurred on the district and cross-country travel is no longer permitted which has benefitted bighorn sheep. There are currently no reasonably foreseeable actions for the project area portion on the district.

Based on the potential direct, indirect, and cumulative effects and the long-term improvement for habitat, the proposed action **may impact but would not contribute to a trend toward federal listing (MINT).**

5.2.2 Pygmy Rabbit

The pygmy rabbit is the smallest of North American rabbits. The morphology of the pygmy rabbit includes dark grizzled or slate-gray above and buffy white or grayish below, with a tail that's short, gray and inconspicuous. Pygmy rabbits can be distinguished from other rabbits by size alone, but also have shorter ears and do not have a white tail, such as cottontails. The pygmy rabbit has a discontinuous distribution occurring in Montana, Wyoming, Idaho, Utah, Nevada, California, Oregon, and Washington (Green and Flinders 1980a). The Washington state population is considered genetically distinct from the remainder of the species and has been listed as endangered by the USFWS. On January 8, 2008 the US Fish and Wildlife Service initiated a status review to determine of listing the pygmy rabbit is warranted (USFWS 2008b). There is little information on the current distribution of pygmy rabbits in Nevada, but some broad-scale research has been done (Larrucea 2007).

Pygmy rabbits are found primarily on plains dominated by big sagebrush and on alluvial fans where plants occur in tall, dense clumps (Green and Flinders 1980b). The hiding/cover attribute of woody vegetation (height) and the herbaceous component is perhaps the most critical habitat element for this species (Green and Flinders 1980b), because they would seldom venture even a short distance from suitable cover, dense stands of big sagebrush along streams, roads, fences and ditches may be the avenues of dispersal (Green and Flinders 1980b). Fragmentation and loss of sagebrush habitat is a major concern because pygmy rabbits are suspected of being reluctant or unable to cross open areas to disperse (Weiss and Verts 1984).

The pygmy rabbit is dependent upon dense stands of big sagebrush (Artemisia tridentata) for foraging and breeding habitat. Big sagebrush is their primary food source and constitutes up to 97 to 99% of their diet in the winter (White et. al. 1982). During the summer, grasses become an important part of the diet utilizing 30 to 40% (Green and Flinders 1980b). Within these stands of dense sagebrush, pygmy rabbits select sites that have the greatest cover densities in which to dig their burrows. Pygmy rabbits differ from other native rabbits in that they dig their own burrow system (Weiss and Verts 1984); generally having two (2) or more entrances and their home range is usually within 30 yards of the burrow entrances. The pygmy rabbit digs burrows that generally occur on slopes and have several entrances (up to 10) that may include chambers up to three feet deep (Hoefler, et al. 2003). Burrows are usually under big sagebrush and only rarely located in an opening in the vegetation. In Idaho and Oregon pygmy rabbits are found in shrub densities ranging from 30 to 46 percent shrub cover (Green and Flinders 1980b; Weiss and Verts 1984). Generally soft, deep soils are required for burrowing. They also use the contours of the soil, most often digging into a slope. The elevational range of pygmy rabbits in Nevada extends from 4,494 to over 7,004 feet (1,370-2,135 m) (Green and Flinders 1980b). Mating occurs from late February to early May and the young are born from March to early August (Hoefler, et al. 2003).

Pygmy rabbits may be active at any time of the day or night and appear to be most active during mid-morning (Bradfield 1974; Green and Flinders 1980b). Pygmy rabbits

maintain a low stance, have a deliberate gait, and are relatively slow and vulnerable in more open areas. They can evade predators by maneuvering through the dense shrub cover of their preferred habitats, often along established trails, or by escaping into their burrows (Washington Department of Fish and Wildlife (WDFW) 1995). Pygmy rabbits tend to have relatively small home ranges during winter, remaining within roughly 30 m (98 ft) of their burrows. They have larger home ranges during spring and summer. Pygmy rabbits may travel up to 1.2 kilometers (km) (0.75 miles (mi)) from their burrows, and there are a few records of apparently dispersing individuals moving up to 3.5 km (2.17 mi) (WDFW 1995). The annual mortality rate of adult pygmy rabbits may be as high as 88 percent, and over 50 percent of juveniles can apparently die within roughly five weeks of their emergence. However, the mortality rates of adult and juvenile pygmy rabbits can vary considerably between years, and even between juvenile cohorts within years. Predation was shown to be the main cause of pygmy rabbit mortality in Idaho (WDFW 1995).

Population cycles are not known in pygmy rabbits, although local, relatively rapid population declines have been noted in several states (Weiss and Verts 1984; WDFW 1995). After initial declines, pygmy rabbit populations may not have the same capacity for rapid increases in numbers as other Leporids due to their close association with specific components of sagebrush ecosystems, and the relatively limited availability of their preferred habitats (Green and Flinders 1980b; WDFW 1995).

Pygmy rabbits are known to occur across the Santa Rosa Ranger District including in the project area.

5.2.2.1 Determination of Effects

Direct effects to pygmy rabbit could include avoidance of the areas during implementation and vehicle-related mortality during the 28 cumulative days of gathering activities. Effects would be lessened by implementation occurring outside of the peak of the mating season (mating February to May and young born between March and early August) (Hoefler, et al. 2003). Because implementation would not occur between March 1 and June 30 for Greater Sage-grouse, direct effects would be lessened. The likelihood of vehicle-related mortality would be reduced if a speed limit of 20 miles per hour was observed during project implementation. No known burrows occur in or near the proposed holding facilities on the forest.

Indirect effects include a long-term increase in the quality of habitat with the removal of 1,200 head of domestic horses. No habitat would be lost as a result of the project. Holding facilities on the forest are located in already-degraded habitat. The short duration of their use would not meaningfully impact pygmy rabbit habitat.

Cumulative effects are analyzed at the scale of the project area and include fire and invasive species, grazing, off-road travel and mining. A majority of the project area has burned in the last ten years and there are issues with annual grasses such as cheatgrass that have altered the fire regime. Grazing is authorized on Forest Service

and BLM lands in the project area. Livestock grazing can affect the quality of habitat by reducing cover and nutrient content of grasses and forbs (Thines et al. 2004). Mining exploration is not currently occurring in the portions of the project area on the Santa Rosa Ranger District but has occurred in the past. Travel management has occurred on the district and cross-country travel is no longer permitted which has pygmy rabbit. There are several miles of transmission lines and cell towers in the cumulative effects analysis area that have fragmented habitat and created perches for corvids and raptors that can predate on rabbits. There are currently no reasonably foreseeable actions for the project area portion on the district.

Based on the potential direct, indirect, and cumulative effects, and the design feature of no activity between March 1 and June 30, and the long-term improvement in habitat, the proposed action **may impact but would not contribute to a trend toward federal listing (MINT).**

5.2.3 Townsend's Big-eared Bat

There are two subspecies of Western big-eared bat (C*. t. townsendii and C. t. pallescens*) which are highly dependent on deep caverns or mines for roost, maternity and hibernation sites, but are occasionally found roosting in abandoned buildings. In general, Western big eared bat is found throughout western North America and is widely distributed in Nevada. Western big-eared bats use a variety of grassland/shrub and forested habitats, primarily pinyon-juniper-mahogany, white fir, blackbrush, sagebrush, salt desert scrub, and agricultural and urban habitats, up to 10,000 feet (Bradley et al 2006). Western big-eared bat foraging habitat also occurs in the vicinity of free-standing water or along stream corridors. They are thought to forage exclusively on moths, and may be able to locate and glean insects from vegetation. Sherwin et al. found elevations below 8,528 feet to be the only variable significantly associated with Western big-eared bat cave and mine roost selection across their entire data set for six study areas in Nevada and Utah (Sherwin et al. 2000; Ports and Bradley 1996).

Winter roosts (hibernacula) may be caves, rocky outcrops, old buildings, or mine shafts. Western big-eared bats periodically rouses to actively forage and drink, and move to alternate roosts. Arousal is intermittent where winter temperatures are predominantly non-freezing, but hibernation is prolonged in colder areas (Ports and Bradley 1996; Bradley et al 2006).

The animals may roost singularly or in small numbers. Roost sites are limiting. Western big-eared bats use of roosts (consistent vs. non-consistent) is dynamic, and varies widely depending on availability of roosts and micro-conditions at individual roosts. Individuals will utilize foraging habitat associated with roost sites, and may exhibit site fidelity to foraging areas. This species does not appear to migrate. In summer, males and non-breeding females roost alone (Sherwin et al 2000).

Townsend's big-eared bats are very sensitive to human disturbance and will abandon roosts if disturbed. Low reproductive rates and limited roost sites make this a vulnerable species (Piaggio 2005).

There are no records of the species in the project area however surveys have not been conducted to rule out occupancy. Habitat is suitable with several cliffs and caves, and the Quinn River offers suitable foraging habitat.

5.2.3.1 Determination of Effects

Direct and indirect effects are assessed at the scale of the project area. The project area contains roosting and foraging habitat. There are no known roosts or winter hibernacula within the project area. Habitat has not been modeled for this species due to lack of data.

Direct effects to bats could include noise disturbance and avoidance of the area during the 28 cumulative days of project implementation. In addition there could be collisions with vehicles particularly near riparian corridors. The risk of vehicle collisions would subside by the end of October as that is when many bats in the NE zone begin hibernating (Bradley et al. 2006). Because activities would occur during the day, impacts to foraging would be minimal. The holding facilities occur near potential foraging habitat; however the short duration of their use would not meaningfully impact any bat species in the area.

Indirect effects are effects to species habitat. There would be no habitat loss as a result of this project. The removal of 1,200 head of domestic horses could improve foraging habitat over time. The holding facilities are located in already disturbed habitat. The short duration of their use would likely not further impact habitat.

Cumulative effects are analyzed at the scale of the project area and include fire and invasive species, grazing, off-road travel and mining. A majority of the project area has burned in the last ten years and there are issues with annual grasses such as cheatgrass that have altered the fire regime. Grazing is authorized on Forest Service and BLM lands in the project area. Mining exploration is not currently occurring in the portions of the project area on the Santa Rosa Ranger District but has occurred in the past. Travel management has occurred on the district and cross-country travel is no longer permitted which has benefitted bats. There are currently no reasonably foreseeable actions for the project area portion on the district.

White nose syndrome is a fungal infection causing extensive mortality in bats in the Eastern United States. Fortunately there are no cases in Nevada as of yet. The disease is most often spread by cave spelunkers and bat researchers but protocols have been put into place to prevent contamination and many caves are being closed to recreation as a precaution. On the Santa Rosa Ranger District several mine adits have been closed with bat-compatible exclosures to prevent human interference and potential spread of White nose syndrome.

Based on direct, indirect, and cumulative effects, no loss of roosting or winter hibernacula habitat the project **may impact individuals but is not likely to contribute to a trend towards federal listing or loss of viability**.

5.3 Management Indicator Species

Sage-grouse were discussed in previous sections.

5.3.1 Mule Deer

Mule deer (including all subspecies) are distributed throughout western North America from southern Alaska, south to Baja Mexico, east to central Canada and the Plains states. The species is a widespread resident of Nevada, with habitats ranging from low-elevation shrublands to upper elevation subalpine communities. Mule deer in Nevada generally summer at higher elevations and migrate to lower woodlands or shrublands in winter to find food and seek cover from winter weather (NatureServe 2014).

Deer usually require several plant communities and use a variety of land and vegetation features for cover and forage. Cover habitat is utilized to ameliorate thermal conditions, as well as provide security. Vegetation providing cover may include basin big sagebrush, pinyon-juniper, aspen, and conifer stands. Dietary composition consists of a mix of grasses, grass-like plants (i.e. sedges and rushes), forbs, shrubs, and trees. Species selection and ratio of relative use varies locally, regionally, and seasonally. Shrubs and trees (browse) dominate deer diets during the winter. During the spring, consumption of forbs, grasses, and grass-like species increases. As grasses cure, forbs and browse become the species utilized as summer forage, and in the fall use of shrubs and trees increase and again are the predominate forage (Wasley 2004). Lands on the Humboldt National Forest provide the full compliment of seasonal habitats and encompass a considerable portion of mule deer range in Nevada (USDAFS 2008).

The Forest Plan identified the 1986 population of mule deer at 63,000 animals, with a maximum potential of 88,200 animals (USDAFS 1986). Mule deer populations in Nevada have undergone dramatic highs and lows over the past 150 years. Today's numbers are estimated to be higher than historic populations (Wasley 2004).

Prior to European settlement in Nevada populations were low, but widely dispersed throughout the state. The gold rush, the railroad, and livestock industries all disturbed the landscape enough to create new mule deer habitat. The creation of land management legislation and agencies, in addition to aggressive predator removal further combined to increase mule deer numbers, which peaked in the middle of the 20th century. Around 1958 mule deer populations experienced a significant decline correlated with a major statewide drought. Mule deer continued to decline until the mid 1970s. High fawn ratios, ideal weather conditions, and increased control of predators likely combined to create the second mule deer population peak of the century in the 1980s (Wasley 2004).

However, the quality vegetation that was key in the first mule deer population increase had declined as it aged and lost its vigor. The century-long grazing practices, invasive weeds assisted by fire, pinyon and juniper encroachment, increased human population expansion in the form of roads, mines, houses, and the resulting traffic created an ever-increasing burden on mule deer populations. All these conditions combined with yet another drought and harsh winter conditions which lead to the winter die-off of mule deer of 1992 – 1993. Statewide mule deer numbers have remained relatively stable over the past 10 years (USDAFS 2008).

According to the 2008 forest-wide MIS report, there are approximately 1,161,000 acres of mule deer habitat in the northeast districts (USDAFS 2008b).

5.3.1.1 Determination of Effects

Direct effects are analyzed at the scale of the project area. Mule deer could be directly affected by vehicle collisions and noise disturbance from helicopters during the 28 cumulative days of project implementation. Studies have shown that deer will move away from, or flush, from an approaching person and will usually allow a person in or on a vehicle to get closer than a person on foot (Wisdom et al. 2005). Wisdom et al. (2005) found that mule deer showed little measureable flight response to experimental OHV treatments but cautioned that deer may well be responding with fine-scale changes in habitat use (i.e. avoidance), rather than substantial increases in movement rates and flight responses. Several studies have found that mule deer avoid areas in proximity to roads. Deer avoid primary roads more than secondary or tertiary roads and also avoid roads more in open habitats as opposed to areas with vegetative or topographic cover (Wisdom et al. 2005). Deer will likely avoid the holding facilities on the forest during their use; however since the use is of short duration it will be a short-term impact.

Indirect effects are effects to species habitats. The project would cause no loss of habitat and would improve the quality of habitat in the long-term by the removal of 1,200 head of domestic horses that can reduce the quantity and quality of deer forage. The holding facilities are in already-degraded habitat and their use would not meaningfully impact mule deer habitat.

Cumulative effects are analyzed at the scale of the project area and include fire and invasive species, grazing, off-road travel and mining. A majority of the project area has burned in the last ten years and there are issues with annual grasses such as cheatgrass that have altered the fire regime. Grazing is authorized on Forest Service and BLM lands in the project area. Livestock grazing can affect the quality of browse via competition and can reduce the nutrient content of grasses and forbs (Thines et al. 2004). Mining exploration is not currently occurring in the portions of the project area on the Santa Rosa Ranger District but has occurred in the past. Travel management has occurred on the district and cross-country travel is no longer permitted which has benefitted mule deer. There are currently no reasonably foreseeable actions for the project area portion on the district.

Overall the proposed action would not change the current population trends for deer but could lead to some avoidance of the area during operations.

5.4 Migratory Birds and Bald and Golden Eagles

Executive Order (EO) 13186, signed January 10, 2001, lists several responsibilities of federal agencies to protect migratory birds, among them: support the conservation intent of the migratory bird conventions by integrating bird conservation principles, measures, and practices into agency activities and by avoiding or minimizing, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions.

Additional direction comes from the Memorandum of Understanding (MOU) between USDAFS and USFWS signed January 17, 2001, and another finalized in December 2008 (MOU 2008). The purpose of this MOU is to strengthen migratory bird conservation through enhanced collaboration between the Forest Service and Fish and Wildlife Service, in coordination with state, tribal, and local governments. The MOU identifies specific activities for bird conservation, pursuant to EO 13186 including: strive to protect, restore, enhance, and manage habitat of migratory birds, and prevent the further loss or degradation of remaining habitats on National Forest System Lands. This includes: a) identifying management practices that impact populations of high priority migratory bird species, including nesting, migration, or over-wintering habitats, on National Forest System Lands, and b) developing alternatives to minimize impacts to birds and important habitats.

Migratory birds use all habitats within the project area during the breeding season. Bald eagles may use the area for wintering habitat and Golden Eagles are year-round residents. Within the portion of the project area that is on-forest, there are several known golden eagle nests. Two of the nests near the Devil's Gate area where checked on July 3, 2014 and were found to be inactive.

5.4.1 Determination of Effects

Direct effects are analyzed at the scale of the project boundary. Species nesting in cliff and talus habitats could be impacted by the use of helicopters during project implementation. There are several known raptor nests in the project area and it is recommended that helicopters stay 1,000 feet Above Ground Level above active nests, and that a 200 meter horizontal buffer of the nest site be observed between March 1 and August 31, in accordance with the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act. On July 3, 2014 nests in the Devil's Gate area and Quinn River corridor were checked for activity and found to be inactive. No buffers would need to be applied this year. The nests would need to be re-checked next year if project activities were to occur within the buffer area between March 1 and August 31. Holding facilities are not located near any known raptor nests.

Direct impacts to migratory birds can include disturbances leading to avoidance, dispersal (flushing), abandonment of nest sites, or mortality from collision or trampling during the 28 cumulative days of project implementation. Ground nesting species may be prone to trampling of nests as vehicles pull off the road to park. However, most species of birds tend to nest away from high disturbance areas and the likelihood of nest trampling from activities adjacent to the road is relatively small. Mortality from collisions is dependent on vehicle speed, weather conditions, road conditions, and in some instances, bird species (as larger game birds, grouse for example, may move slower or take longer to become airborne). Mortality from collisions and trampling has a higher potential to impact young birds, as they may not have the capability to move out of the area. These direct impacts and the likelihood of "take" would be reduced by avoiding all activity that could disturb nests between May 1 to July 15 (GBBO 2010), and if a speed limit of 20 mph or less was observed when possible. However, if the activities occurred during the breeding bird season it is not anticipated to cause any take. No vegetation removal would occur as horses are gathered and existing roads would be used when possible during gathering operations. The use of the holding facilities on the forest would likely not meaningfully impact raptors or migratory birds due to the short duration of their use.

Indirect impacts are those that alter or remove suitable bird habitats. No habitat loss would occur with the project and would increase in quality in the long-term with the removal of 1,200 head of domestic horses. Holding facilities are in already-degraded habitat. The short duration of their use would not meaningfully impact habitat for raptors or migratory birds.

Cumulative effects are analyzed at the scale of the project area and include fire and invasive species, grazing, off-road travel and mining. A majority of the project area has burned in the last ten years and there are issues with annual grasses such as cheatgrass that have altered the fire regime. Grazing is authorized on Forest Service and BLM lands in the project area. Livestock grazing can affect the quality of nesting habitat by reducing cover (Thines et al. 2004). Mining exploration is not currently occurring in the portions of the project area on the Santa Rosa Ranger District but has occurred in the past. Travel management has occurred on the district and cross-country travel is no longer permitted which has benefitted birds. There are several miles of transmission lines and cell towers in the cumulative effects analysis area that have fragmented habitat and created perches for corvids and raptors that can predate on nests and chicks, as well as adults. There are currently no reasonably foreseeable actions for the project area portion on the district.

Overall the proposed action is not anticipated to cause on "take" for migratory birds or bald or golden eagles, even if activities occur during the peak breeding bird season (May 1 to July 15 for migratory birds and March 1 to August 31 for raptors), due to the seasonal protections around raptor nests and existing mitigations for sage-grouse, in addition to the nature of the proposed project. The project would not cause any habitat loss, with habitat improving in the long-term.

For Bald Eagles, operations will likely not occur during the winter which is the only time which Bald Eagles may be present in the project area. If activities do occur in the area it is unlikely that that they will be impacted and at most may avoid areas where helicopters are in use. Based on the low likelihood of any direct, indirect or cumulative impacts, there would be **No Impact** to Bald Eagles from the project.

6. Recommended Mitigations

- No activity between March 1 and June 30 to protect Greater Sage-grouse lekking and for pygmy rabbit breeding season (necessary as determination is based upon it for sage-grouse and pygmy rabbit).
- From March 1 to August 31 helicopters must stay 1,000 Above Ground Level from active raptor nests and a 200-meter horizontal buffer for on-the-ground activity. This mitigation is necessary to avoid “take” under the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act.
- Observe 20 mph speed limits during project implementation (recommended but not necessary).
- Avoid activity during the breeding bird season from May 1 to July 15.

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